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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,070	02/20/2002	Makoto Kida	SUSU118765	7026

26389 7590 03/19/2004

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EXAMINER

JACKSON, ANDRE L

ART UNIT	PAPER NUMBER
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3677

DATE MAILED: 03/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/079,070

Applicant(s)

KIDA, MAKOTO

Examiner

Andre' L. Jackson

Art Unit

3677

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

DETAILED ACTION

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, 5 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by USPN 6,381,808 to Kida. Kida discloses a hinge comprising a frictional body (33) made of resin and having an elongated bearing hole with a tapered inner surface (Fig. 3) and a center line and at least one lubricant groove (33 a) cut in the tapered inner surface (col. 5, lines 27-29) having an opening and configured to hold lubricant; a rotation shaft (31) having a tapered peripheral surface (31a) and inserted in the bearing hole of the frictional body; a tightening tool which moves the rotation shaft and the frictional body relative to each other, thereby to hold the shaft tightly in the bearing hole, wherein the lubricant groove being dimensioned such that it remains open even when the tapered inner surface is deformed as the shaft exerts a pressing force on the tapered inner surface, and the tightening tool includes a screw (31b threaded end portion of the shaft) and a nut (37) set in mesh with the screw.

Regarding claims 4 and 5, as seen in figure 3, the frictional body includes an inclined elongate recess or groove formed in a longitudinal direction relative to the shaft within an inner surface of the frictional body relative to a centerline of the body. See column 3, lines 19-24. An outer collar (32) is tightly fitted about the frictional body.

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 6-8 and 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kida in view of USPN 6,286,187 to Chang. Kida discloses that the inner surface of the frictional body can include several recesses where grease is pooled but Kida does not illustrate or disclose that a cross-sectional view of the recesses are substantially V-shaped or that the width of the recesses are greater than the height or depth of the recesses, where opening edges of the recesses are radiused or the specific location of grooves relative to inner surface of the frictional body and peripheral surface of the rotation shaft. Chang teaches a rotary hinge assembly comprising a rotation shaft (1), a frictional body (2) that receives the shaft and a cylinder part (13), the cylinder part including an oil groove (133) of a V-shape having a wide opening with edges extending at an angled radius as seen in a cross-sectional view in Fig. 2B. Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to modify the hinge of Kida to include the rotary hinge assembly as taught by Chang to provide an improved lubricant hinge system for the purpose of retaining or pooling sufficient amounts of lubricant throughout the life of a hinge system.

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kida. Kida discloses all the limitations of the above claim except Kida, in the preferred embodiment, fails to disclose a spring member provided in a compressed state between the frictional body and the

Art Unit: 3677

tightening tool. As shown in the admitted prior art figures 1 and 2, these hinge assemblies include compression springs (17, 25) sandwiched between a fixed washer (18) and a rotation washer (16) or a nut (24) to prevent friction from locking the rotation of the hinge parts when being displaced. However, since the frictional body of the preferred embodiment of Kida includes "springy characteristics" Kida omitted the need for the compression spring, but it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to modify the hinge of Kida to include a compression spring sandwiched between the frictional body and the tightening tool as explained by the admitted prior art to provide proper frictional rotation of the working parts as a matter of preference in design. See column 5, lines 12-16.

### **Response to Applicant's Arguments**

Applicant's arguments filed in the Amendment on December 1, 2003 have been fully considered but they are not persuasive. Applicant's remarks on pages 10-12 of the above amendment states that the prior art relied upon (#6,381,808 to Kida and #6,286,187 to Chang) does not anticipate applicant's invention because of the amendment to the claim(s), in particular, the recitation that the lubricant groove is dimensioned such that it remains open when the tapered inner surface is deformed as the shaft exerts a pressing force on the tapered inner surface. Moreover, applicant adds that Kida does not state the specific dimension as to the cross-sectional of lubricant groove(s) disclosed therein or that Kida addresses any of the problems applicant's claimed invention sets out to remedy.

First, the Examiner will address the amendments to applicant's claims. The mere inclusion of the new limitation "being dimensioned such that it" or "is dimensioned such that it" in applicant's claims 1, 9 and 13 respectively, is a positive limitation, however, this limitation

Art Unit: 3677

only requires the ability to so perform. In any event, the Examiner believes that even though Kida is silent on the specific cross-sectional shape of the recesses/grooves, it would be obvious to one of ordinary skill in the art that the geometry of the recesses or grooves of Kida can be modified or altered, since changing the shape does not change the function of the groove or the way the groove operates. Chang, whom teaches a specific dimension of a grease/oil groove is relied upon for a secondary teaching within the art which illustrates a specific dimension of a recess/groove that can be incorporated by the grooves/recesses of Kida. Thus, Kida and Chang are used together as an obvious type rejection of the above claims and subsequent dependent claims. The amount of deformation is not specified in the claims and is thus not considered here.

Next, the assertion that Kida is silent on the problems concerning applicant's claimed invention is found not to be persuasive. Although the purpose of applicant's invention is clearly stated in applicant's disclosure and remarks, Kida too is concerned about similar problems that usually confront one skilled in the field of friction hinges. Kida describes stress and or strain applied to his hinge assembly that might cause pre-mature wear resulting in a shortened life cycle of the operating parts and the hinge assembly as a whole.

In column 5, lines 17-39, Kida discloses an awareness to the problems aforementioned, in which Kida takes steps to minimize these problems by the combination of a particular material selected, specific structural dimension of operating parts and the formation of lubricant grooves/recesses. Although Kida does not explicitly state that the grooves are dimensioned such that they remain open when a tapered inner surface is deformed as a shaft exerts a pressing force on tapered inner surface as claimed, Kida does include a tapered rotation shaft 31, a tapered inner collar 33 and grooves/recesses 33a, where the grooves/recesses can be formed at an inner surface of the collar

Art Unit: 3677

33 or at an outer surface of the shaft 31 or both the shaft and collar can each include grooves/recesses.

Consequently, Kida includes the same structural and functional components relied upon by applicant, thus Kida can inherently operate similarly to applicant's claimed invention and with the combination of Kida in view of Chang, applicant's claimed invention is made obvious to one skilled in the art. Therefore, the Examiner believes applicant's claims 1-21 are unpatentable over Kida in view of Chang for the abovementioned reasons.

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 3677

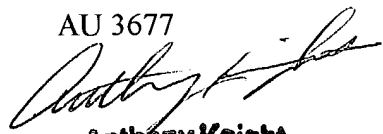
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre' L. Jackson whose telephone number is (703) 605-4276. The examiner can normally be reached on Mon. - Fri. (10 am - 6 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (703) 308-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ALJ

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